THE

SOUTHERN AGRICULTURIST.

DECEMBER, 1831.

PART I.

ORIGINAL CORRESPONDENCE.

ART. I.—*Some observations on the culture of the Cherokee or Nondescript Rose, as a hedge plant: selected from the unpublished manuscripts of the late* STEPHEN ELLIOTT.

(Read before the Horticultural Society of Charleston, October 13, 1831.)

Along many parts of our sea-coast the want of timber begins to be seriously felt.

With the increase of our population, and the extension of our cultivation, the destruction of our forests has been proportionally great. The culture of cotton has accidentally added to the causes which were naturally waiting them. By diverting a great portion of the labour of the country into a new channel, and requiring for its successful cultivation a frequent change of soil, the woodlands were every where rapidly cleared; and in many situations no more timber were reserved than appeared to be absolutely necessary for the immediate use of the plantations. The storms which since the year 1804, have swept our sea-coast with unprecedented violence and frequency, have accelerated the progress of this evil. On the islands and on the exposed points of the adjacent main, most of the fruit trees which were reserved by the prudence of the proprietors, have been destroyed by the unaccustomed violence of the wind. The planters already in many situations begin to suffer from the want of timber for fences, and to perceive the necessity

of procuring some substitute for this troublesome and expensive enclosure.

In countries where stone does non abound, hedges of living plants offer the only resource against the failure of timber: and where suitable plants can be discovered it cannot be doubted that hedges from their duration, their strength, and their exemption from accident are superior to wooden enclosures of any description whatsoever.

To the planters of this country who are beginning to suffer from the want of the timber, and to those who may wish to give to their plantations the improvement which permanent and impenetrable fences will certainly bestow on them, I would recommend the culture of the plant now generally known in Carolina and Georgia, by the name of the Cherokee or Nondescript Rose.

It is now about fifteen years since some observations I made on its habits and growth, led me to believe it would prove a most valuable hedge plant; as such I recommended it to many persons, but circumstances which it is un necessary here to mention, prevented me from making any experiment but on a limited scale.

I have now, however, for the last four or five years been planting these hedges extensively, and I feel gratified in stating that the result has answered my most sanguine expectations, and I think, I may without fear of disappointment, congratulate this country in possessing a plant which for strength, for permanency, for facility of culture, and for beauty equals, and perhaps, exceeds the hedge plant of any country and of any climate with which we are acquainted.

The history of this plant is obscure. It was cultivated before the revolution by the late Nathaniel Hall, Esq. at his plantation, near Savannah river, and having been obtained from thence and propagated as an ornamental plant in the garden of Mr. Telfair, and the Mr. Gibbons' of Sharon and Beach Hill, under the name of the "Cherokee Rose," it is probable that it was originally brought down from our mountains by some of the Indian traders.* Michaux met with it in the gardens in Georgia, and perceiving that it was an undescribed plant, he introduced it into the gardens near Charleston as an Nondescript Rose. Hence it

* Mr. Kin, a most indefatigable collector of the plants of the United States, and I believe a very worthy and honest man, assured me that he had found this Rose on or near the Cumberland mountains, in Tennessee.

has obtained in that neighbourhood the popular but absurd name of the "Nondescript." In Georgia, it has always retained the name of Cherokee Rose.*

In the year 1796, I obtained a few of these plants and placed them accidentally at no great distance from each other on a straight border of my garden. About two years afterwards the garden was destroyed and thrown into pasture and the plants entirely exposed. I afterwards removed from the plantation, and for a few years it was uncultivated. In 1802, the plants had already formed a substantial hedge, their long flexible branches falling to the ground and taking root extended themselves on every side. They soon met, and intermingling their thorny limbs formed a barrier which no quadruped could break, and which I believe no bird can penetrate.

This original hedge still remains on my plantation; it is employed now as a garden fence by one of my negroes; it has extended sixteen or eighteen feet in breadth, and its height nearly equals its width. It has been suffered to grow to this size partly from curiosity as its situation was retired, but principally because in its efforts to extend itself, it annually furnished a great number of layers and offsets for the formation of new hedges.

I have not entered into a description of this new plant, because in this country it is well known. I shall merely subjoin in a note its botanical characters.† Its qualities are more important and it may be proper to detail some of the advantages which it eminently possesses. Approaching to a vine in its habit, its growth is rapid. Its branches are thickly armed with short strong and persistent thorns, and their flexibility enables the cultivator to give them whatever form he may prefer; as they take root readily wherever they touch the ground, and can be trained in any direction where they may be required, every weak place can in one or two months be strengthened by living plants, and with

* As even the name of Cherokee Rose is attended with some inconvenience and confusion, having been already applied, though improperly to the the rose coloured Robinia. (*Robinia hispida, Lin:*) it may, perhaps, be not improper to introduce a new and appropriate name, and distinguish this plant as the "Hedge Rose."

† *Rosa Sepiaria?* Caule aculeato, decumbente foliolis ternatis, (rarissime quinatis) foliolis lanceolatis, acutis, serratis, coriaceis, glaber, dimis, lucidis, perennantibus, floribus solitariis albis calyce hispido, laciniis, lanceolatis longe acuminatis inequalibus duobus apice foliaceis serretis.

attention the whole hedge may be made a continued series of plants with their stems and branches so completely interlocked, and so strongly armed as to become to animals impenetrable. Even without attention this result generally takes place. Add to this that, as by layers the places of the old plants which decay can be immediately supplied, the duration of the hedge may be considered as interminable.

Although beauty in a hedge may not be an object of primary importance, it has some claims to notice, and may add some inducements to its cultivation. This Rose has been introduced into all gardens as an ornamental shrub, as a hedge it would decorate our fields, it would enliven the sombre and tawny hue of our sunburnt pastures. Its dark, lucid, and perennial leaves would give gaiety and animation to the bosom of winter, whilst its large snow white flowers would exhibit through the summer, a splendid contrast to its rich foliage.

Its cultivation is easy. It will grow without much difficulty from cuttings, but as its branches, if undisturbed, fall to the ground and take root, a few old plants will afford a very great supply of young ones with roots, and these if set out at any time between September and March will succeed almost universally.

It grows in all soils, but prefers a close and damp one. I have raised it, however, in the poorest and driest sand, but its growth was proportionally slow. How it will bear submersion I have not ascertained. If it should not be easily destroyed by water, it will prove a great acquisition in the swamps along the margin of our large rivers, where the fences are often by freshets swept entirely away; and in their rich soils it will grow with great luxuriance.

It has resisted the cold of 1779–80, and 1796–97, the two severest winters within the recollection of most of the present generation. Of the former winter I have but an indistinct recollection, and with this plant I was not then acquainted; but in the latter it grew in my garden, and when the orange trees were almost without exception killed to the roots, this rose was uninjured.

The method of culture which has succeeded best with me, and which, I would, therefore, recommend, is to plant on the level ground, and suffer it to grow without support. It should be kept free from weeds and bushes for one season, and then, (except in newly cleared land where shrubs shoot

up vigorously from old roots) it will protect itself. Its growth, however, will certainly be accelerated by care and attention. If planted on banks, the soil on their summit is generally poor and dry, and the plants grow slowly and require much nursing, and if planted near fences and supported by them, the branches will climb on the fences, and leave the base of the hedge where strength is most required, open and weak. When once a good and compact base is acquired, height is very soon obtained.

The oldest hedge on my plantation planted as I recommend, was used as a fence at the age of four years, by stopping a few gaps which had been used as paths by cattle. A single pannel of fence stopped each gap. This hedge is about 600 yards long. The plants were originally set out at a distance of ten feet. If they had been planted as near as five feet, I have no doubt that one year would have been gained. Indeed, in one part of this hedge where the ground is rich, it formed when three years old, a sufficient fence. I have now trimmed it to a width of seven feet, a space very little greater than a worm fence occupies and less than is necessary for a double ditch and bank, and I find it amply sufficient. The size and fashion of the hedge, however, may be regulated very much at the pleasure of the cultivator.

It may be proper to mention that the hedges on my plantation have been constantly exposed through the winter to cattle of every description, excepting goats. In February and March, sheep and cows eat the young shoots, but they have never injured the plants themselves although they have possibly retarded their growth. On the other hand it is probable that extensive hedges of this rose would afford a very considerable resource to cattle at that season of the year when food is most wanted.

These hedges will certainly require some work to trim them and keep them in good order; but this will be trifling when compared to the waste of time and labour necessary to repair our wooden fences. Besides the hedges can be trimmed at any season of the year when the planter has most leisure: and if neglected, even for years, no other evil will arise than the temporary loss of ground, occupied by their encroachments. The oldest plants can be trimmed without injury.

It, perhaps, is scarcely necessary to point out to the planters of this country the important consequences that may result from the general introduction of hedges on their plantations. By enabling them to divide their grounds into fields of different dimensions. They will have the power of varying their culture with ease, of making experiments at pleasure, of improving their pastures, and of arranging their crops not merely with a view to the immediate product, but to the future amelioration of the land and the convenience of their crop. The advantages of permanent enclosures would be felt in every branch of agriculture. They are the foundation of all improvement. And who in this country can encounter the trouble and expense of extensive wooden enclosures, when, besides the rapid decay of the material itself in a climate so unfavourable to its duration; gales of wind frequently level and injure them, and a neglected spark of fire may entirely destroy them. Hedges are entirely exempt from these accidents; they are planted and formed with little trouble, they strengthen with age, they bear injury and neglect, they defy the severest tempests, and their perpetual verdure secures them from the ravages of fire.

June 8th, 1814.

Art. II.—*On the Culture of the Sweet Potato: by the* Rev. Paul T. Gervais.

"Charleston, September, 1831.

Respected Sir,—I received your letter some time ago, requesting me to give you a detailed account of the management of my various crops, and particularly of my sweet potato crop. In compliance with your request, I now furnish you with such statements upon the latter subject as I hope may correspond with your object.

In the first place as respects the preparation of the land, my mode differs from the common practice materially. I list the land twice, not by increasing the first listing, but by dividing the two nearest listings and drawing them into the

middle space. This is, in my opinion, an important operation. It prepares every particle of trash, grass, &c. for the immediate food of the young shoots of the potato. I prefer running a cow-pen over the soil to any other manure. But it must be done in the spring or early part of the summer, if neglected till late in the season, the potatoes will not yield an abundaut crop. This mode of manuring then retards the growth of the shoots, and gives a yellowish and sickly appearance to the leaves. It is not necessary on heavy or stiff land,—mine is very light. This system gives it cohesion, and prevents it from blowing in high winds. When I cannot cow-pen I use ten cart loads of well rotted manure to every quarter of an acre. It is essential that the manure should be in a state ready to nourish the seed as soon as it is put in the ground. Cotton seed is also a good manure, used in reasonable quantities. For potatoes, it must be applied early and three pecks of seed spread along a row of 105 feet is quite sufficient, more is injurious, it should be placed under the first list made in January or early in February. The second listing should take place about the beginning or middle of March, by which process all the seed and manure will be well mixed in the soil, and any injurious sprouting of the cotton-seed will be prevented. About the beginning of April, I consider the best period for planting, when an abundant crop is required, and not large potatoes to supply the market—the middle size is perhaps the sweetest. My present crop of potatoes, (by a letter from the overseer, dated the 23d of September,) yields from three to three and an half bushels to a bed of one hundred and five feet in length. When I first began to plant, it required six or seven acres to feed about fifty persons, now four acres and an half yield an abundant supply for eighty-five persons.

Two kinds of potatoes only are now planted by me, the brimstone or yellow heart and the yam: the former comes in earlier and is much more prolific than the latter. About one-fourth of the quantity is sufficient to serve till October, when the yams begin to yield abundantly and are more agreeable to the people. Of the yellow hearts I plant slips for seed only, late in the season and even then they will commonly grow too large for seed. Large potatoes used for seed are not, in my opinion, beneficial: they produce early and strong vines, but do not yield much fruit.

The best seed is that derived from slips planted with a view to seed and not the small potatoes, the dwindled offspring of an exhausted parent. The seed should be cut into two pieces only, for whole potatoes are not as productive as those which are cut. No seed touched with the rot in the slightest degree should be used; nor should they be planted on a wet or rainy day. The seed should be planted on the day it is cut, after making a trench, each piece of potato should be pressed firmly into the ground with the hand, and well covered, and the top of the bed patted with the hoe; grass should never be permitted to grow long among them. The old mode of attending the crop is in my opinion greatly preferable to the new. At present, to gain time, it is usual to hoe the beds and two or three days afterwards to haul them up, but it is much more beneficial to hoe and haul them on the same day.

I have always been in the habit of putting away my potatoes in small hills containing about 25 bushels each; I used formerly to sprinkle them over slightly with pine-trash, but I have discontinued this practice from a conviction of its inutility, and now cover them with corn stalks and earth. The stalks should shingle them effectually against the admission of moisture, and the earth should not be placed too heavily on them. In case of snow, the snow should be carefully removed, but a second application of earth at any time or under any circumstances, will make the potatoes rot prodigiously. The few last years, my potatoes have been well preserved, till the middle of April, after which period I do not consider them wholesome food. They should be dug as late in the season as possible, yet judgment should be exercised so as not to let a frost fall on them. If frost falls upon them and the product is great they will certainly decay, for the ends of many will necessarily be touched with the frost. The potatoes cut with the hoe must carefully be separated from the others, or the moisture from the cut one will communicate it to the others and quickly produce general fermentation. The covering of the potatoes should be finished before sun-set, or the dew will make them rot. They should not be put away in a situation too near a salt-river. If it should so happen that the covering cannot be finished at sun-down, small fires should be made near the hills to preserve a dry air around

them. They should after digging be exposed awhile to the sun to make them dry and clense them from the earth.

Potatoes grown in a black soil which communicates a dirty appearance to the roots, will never, under any management, keep well. Potatoes grown in a soil too rich look whitish and are not easily preserved; they are also not very solid food. The Spanish potato I have, therefore, carefully picked out and thrown away, I would also observe, that the red potato, from what cause I know not, has never flourished with me. I have tried them in different soils and at different periods invariably without success.

Salt mud in any shape, or new earth of any kind will make a fine appearance of vines only; old land well manured will produce the greatest crops. These are the results of my experience, I have stated them to satisfy your request. Respectfully yours.

PAUL T. GERVAIS.

ART. III.—*On the Culture of the Gama Grass, with some observations on Feeding Horses on green food during summer: by* THRASEA.

"Grovehill, Clarke County, Alabama, August 23, 1831.

Dear Sir,—As much as has been said on the subject of Gama Grass, I have thought you might feel anxious to possess it, and have enclosed you for that purpose a few seeds, and a blade of twelve days growth. I discover a valuable correspondent of yours supposes he has found it in South-Carolina, by comparing the seed, he may easily ascertain whether or not it is the case.

In cultivating it I generally drill the seed in a plant bed, say six inches apart, and transplant in moist weather as with cabbage. It is an extremely hardy plant. At the end of the first year the plants can be taken up, the roots torn asunder and the fragments replanted, if a particle of root is found with them; they will grow off vigorously.

This year I kept two cows on this grass, (cut at fifteen days growth) say six weeks, the milk and butter was found to possess a *delicacy* and *richness*, much superior to the *clover* butter of the Philadelphia market.

Instead of the mode of feeding plough horses in the burning season of crop time, viz. "*corn and fodder*," I substituted a food, say equal quantity of the Gama Grass, (at 5½ feet high, one month's growth) and *oats in the sheaf* cut in a cutting box, with a moderate portion of *Indian meal* ground coarse. The result has been such, that I shall never exchange the latter for the former. For the health of the animal, and for *economy*, it would be folly to institute any comparison. The salutary effect on the bowels of a *horse*, *mule* or *ox*, especially in the season of crop time, as well as its singularly *nutritive* quality, had been suggested to me by a gentleman, a native of South-America, well acquainted with its value and use, and also, with the productions of the United States. Both experiments were the consequence of a conversation with him on the subject.

The plants ought to be set two feet apart, as the second year they will lock and cover the ground. In planting out, I dig the ground deep (or plough) and turn under a portion of cow manure; a little half rotten cotton-seed scattered amongst the plants produces a singular growth.

The first year it will seem a trifling plant, until about September. The second, by loosening the ground early round the plants, you will find your most sanguine expectations realized. I cut early in May, three to three and a half feet high, and every thirty days afterwards until the 1st of November.

At *each cutting* I loosen the ground amongst the roots with a narrow hoe, this is the work of a child. For sometime I have been doubtful of the soundness of that theory which restricts the *horse*, *mule* and *ox*, when labouring in the hottest part of the year, to the use, exclusively, of *dry food*, the partial *costive* state of the animal, and the equally *feverish* state of the blood, has long induced me to believe that we were not on the right track, as regards feeding, and it appeared equally doubtful with me that it could be right, to exclude animals from that, which heaven had so especially provided for them, which *to them* is so great a *luxury*, and which *puts their bowels in such a happy state*, as regards health. I could not but be of the opinion

that it was either our *ignorance* of the *species of vegetable matter*, or the *mode of combining* it, that created the difficulty.

In gathering the seed of the Gama grass, some of which will appear the second year, I prefer *letting it fall off*.

Respectfully, Sir, your obedient servant,

THRASEA.

ART. IV.—*On Vegetable Gardens, and the great advantages of a much more general use of vegetable diet: by* THOMAS FULLER HAZZARD.

"West Point, St. Simon's Island, June, 1831.

Mr. Editor,—Agriculture with all her innumerable blessings; offers no branch to the children of Adam, which conduce more largely to their health, comfort, taste, and amusement, than the art of gardening.

To the Southern life, one would consider it almost indispensable; our climate requires, nay, commands a more extensive and daily use of vegetables; we can raise an abundance of the most savory kinds: strange, indeed, that gardening should be so little considered; almost, in general, totally neglected. We who reside in the country are content, at best, with a sparse and niggardly supply, when the Southern tables might abound with a regular monthly succession of choice garden delicacies, which, however, are seldom seen; here and there a few pious and wise gardeners are found, like stars in the terrestial firmament, or saints among the great mass of careless and neglecting sinners, who do bestow a large portion of their time, labour and attention, to the most useful and most excellent art of gardening; and the beneficial consequences can plainly be discovered. To the eye of a foreigner those Southerners who do cultivate and use vegetables extensively, appear almost invariably to enjoy better health, their families, too, are more prosperous, more lively, have handsomer and softer features, fairer complexions; and their daughters

look as round and as plump as a double tomatoes. I have noticed, Mr. Editor, that families who made great use of the finer and more delicate sorts of vegetables, seldom produced topers amongst them.

It appears to have been the opinion of many of the ancient sages and physiological writers, that different kinds of vegetables, produced special and varied effects upon the human mind, the blood, spirits, brain and liveliness of the imagination, or that men's characters, nay their actions too, were very materially influenced by their diet. Look around and see how this theory will apply even now-a-days. Did you ever know a devoted dram-drinker who relished cauliflowers, or a confirmed toper who raised beets or brocoli, and was fond of their taste?

Gardening has ever been admired and practised by only a few, whilst the great mass of mankind seem to neglect and disregard all its benefits. This is a fatal error in the Southern character and arrangements. It can be done upon a small as well as a large scale. The poor man as well as the rich man may have his garden, and all its attendant comforts. Alas Sir, if the time sacrificed in folly and intemperance, were devoted zealously to gardening, would not a visible change be produced throughout the Southern States. Many a family would enjoy happiness and abundance; (because different habits would prevail) who are now suffering all the horrors of pecuniary embarrassment and distress. I am a great advocate for gardening, and have found it immensely beneficial, and would strenuously urge our Southerners to pay more attention to its practical usefulness and economy. Vegetables of great variety and most delicate sorts can be raised in common, nay, every month in succession, if care, and the seasons be properly regarded.

Asparagus is a most substantial article when once established, like good principles, it will endure for generations. Early-york suits us for summer; Savoy and drum-head for winter. Cauliflowers and brocoli excite fancy, and cause prolific and beautiful offsprings. Spinach does best in winter, it comforts and tranquillizes old age. Carrots, parsnips and salsify, purify the blood, comfort the liver, expel low spirits, and enliven the imagination, and sets the poetic in motion. Radishes and cress warm the nervous system, and exhilarate the mind much more than whiskey, peach-

brandy, or any other liquid stimulant. Turnips, both summer and winter, increase strength and vigour of the animal man. Cucumbers are cooling, perfectly wholesome, and produce contentment. Okra and tomatos, fattens. Lettuce, well dressed, sharpens the wit and begets politics. Mellons early in June, eaten with salt and pepper, fill the stomach with gladness and excites to charity and good-will.

In short, Mr. Editor, I might proceed through the whole gardener's calendar and prove from very ancient authority, that every vegetable in its season was intended for man, and will benefit both his mind and his body. The wonder to me is that our Southerners (the major part) should neglect, so important an auxiliary of life and household comfort. Gardening, as an art, must have commenced at a very early period of human history. The Omnipotent, himself, was pleased to plant the first, no doubt it must have been beautiful indeed, and intended to teach Adam and his posterity the importance of system, order, and good cultivation. Of collecting and improving all those vegetables, which though scattered and dispersed, would nevertheless support life, increase and multiply his species, tall in stature, elevated in mind, adventurous in character, less susceptible to discouragement, pain or disease. Philosophers, saints, legislators, poets and men of letters, have each in their day, and generation, lauded, and written in favour of this beneficial and most excellent art. The Greeks and Romans in the day of their greatest national glory, and triumphant military elevation, pursued it with enthusiasm and delight. In Europe, every care and attention, both of science and money, are freely and liberally given to its advancement. Wonderful, indeed, has been the consequences. Vegetables have been multiplied astonishingly, and cultivated to their greatest possible perfection. Where nature and soil were niggard and ungenial, art has been summoned successfully to supply her deficiencies. The earth has been searched, and whatever was found useful and eatable in one climate, has been transplanted to another. This great advancement and application of the art, among the wisest and most enlightened in the old country, should stimulate us of the South to pay more care and attention to the subject, and thereby derive tenfold advantages. If long collards are eatable, surely large fine heads of early-york, savoy and drum-head cabbages must be better. If poke

and palmetto are palatable in spring, are not lettuce and spinach still more so. Farmers of Plynn County your soil and climate are both congenial, why not devote a little more labour and attention to your gardens. Behold your sheep and your cattle, do they not rove over your fields and your forests, chosing the most tender and dainty grasses, seeds and herbs, for their daily food. This is their instinct, the law of nature, which the Creator implanted in them. Is it not a law even unto you also. Man was intended in the beginning to feed on variety, and the earth offers him an abundance. Additional industry would most certainly fill every house and family with luxurious plenty; and many, very many of those destempers now considered incurable, and which annually send thousands of our species prematurely to the tomb, would then disappear.

Mr. Editor, we have not on St. Simon's Island succeeded in raising either artichokes or mushrooms, which are epicurian dishes now only fit for saints. If any of your readers do, invite them to communicate their mode of culture, and furnish you with seed or spawn for distribution, which would be highly acceptible in this gardening Egypt. The New-Zealand spinach promised fair, grew luxuriantly, but our first frost sent it to the shades before its bloom had matured or its sweetness had been tasted. "Just like love," said my Uncle Toby, as he exploded a long dense whiff from his large favourite Dutch pipe; so, if it matured with you, inform us, and be not so sparing of your communications on the growing of vegetables.

Mr. Editor, you who reside in our cities can always be supplied from market with every vegetable as the season offers, but in the country, where every family must depend upon itself, like the Holy Alliance, the want of garden stuffs is a serious privation and inconvenience. We cannot eat cotton, it is certain. I have shuddered mentally in July and August, to see the tables of some of my acquaintances fuming with roast beef, boiled mutton, raving hot, nay, mad, turtle soup; and not a single vegetable to throw into the boiler—the gastrick magazine, as a timely neutral, yea, a peace-maker in the digestion of such powerful combustibles; what a meeting of fish, flesh and fowl, all helter skelter, like the Egyptians in the Red-Sea, and like them never to rise again, unless by a most tremendous convulsion. Thinks I to myself, here is plague, pestilence, fever,

dyspepsia, apoplexy, and every other distemper, all concealed, ready to come forth with a vengeance. Oh for a carrot or parsnip, or even a humble Irish potato well cooked, to pacify and quiet these belligerents; but like the foolish virgins, none of these needfuls were provided. Are we, therefore, to be surprised that so many of our most generous Southerners die young, sometimes go headforemast into eternity, or are tortured whilst on earth with gout, rheumatism and bilious complaints, producing horrors indescribable, whilst the vegetable raising and eating people, actually wear out like old steam-boats, and only burst their boilers from extreme incurable old age. I appeal, Sir, to the history of our species in evidence of my opinion, for it is a singular truth that savages and all rude, ferocious and uncivilized nations, seldom eat vegetables except from dire necessity, and those of the harshest and most ill tasted kinds, so that their diet is the natural cause of their habits, and the abominations of their national characters. I shall conclude with an extract from an old poem which applies to the subject, and I hope will afford amusement to some of your readers.

"There are of learned taste, who still prefer
Cos-lettuce, salsify, and cucumber;
There are, who still with equal praises yoke
Young peas, asparagus, and artichoke;
Beauxs there are still, with lamb and spinach nursed,
And clowns eat beans and bacon 'till they burst.
This boon I ask of fate, where'er I dine,
O, be the lovely-form of carrots mine!
Beets, parsnips, cauliflower—or soft, and clear,
If brocoli delight thy nicer ear.
Give, rural muse! the culture and the name,
In verse immortal, to the rolls of fame.
Admiring nymphs the genial banquet share,
Smile on thy neighbours, and reward thy care.
Oft in each month, industrious youth be thine,
To feast on brocoli, with savory chine;
Oft down thy tuneful throat be thine to cram—
The snow white cauliflower with towl and ham!
Nor envy those with such rich viands blest:
Who feast on "tatoes," collards both at best,
More fit for cows and swine."

I salute you Mr. Editor, with my best wishes, &c.

THOMAS FULLER HAZZARD.

Note.—The New-Zealand spinach succeeds remarkably well with us, but being a summer vegetable only, it must be sown the last of February or commencement of March, and it is probable that our correspondent sowed his too late in the season.

In an article on this vegetable, published in this Journal sometime ago, we gave all the information we were in possession of then, and nothing new occurs to us at present. We will briefly state, however, that we have always found it to resist drought and heat better than any other vegetable usually cultivated for the garden, but is entirely destroyed by much moisture, especially if accompanied with heat. Hence it is that it disappears in August, but by that time it has usually perfected a large quantity of seed, which being extremely hardy will remain exposed near a twelve month without losing their germinating qualities. We have had them to come up on ground, where none had been grown for a whole season. If sown early in September, they will yield several messes before they are killed by a frost, as it requires a severe one to effect this. In a mild winter, we have had them late in December, the ends of the branchas only being destroyed. We have lately been informed that this plant is very little affected by salt water. A gentleman of our acquaintance who had his garden overflowed by the very high tides of 1830 had every thing destroyed in it except the New-Zealand Spinach, which did not sustain much injury, if any at all.—*Ed. So. Agr.*

ART. V.—*On the choice of Cotton Seed—Pawpaw Tree—Food and treatment of Domestic Animals—sympathy of the Pear Tree, and the use Wagons on Farms: by* B.

"Charleston, November, 1831.

Sir,—A planter of Wadmalaw, a respectable and observant man, whose time has been spent almost wholly in the cotton fields of our Sea-Islands, says that—

1. The large clear black seed formerly most prized, produces the coarsest cotton and does not exceed in quantity some of those productive of fine cotton; this kind is separatedfrom the others as bad seed.

2. The other kinds, all more or less downy, seem to belong to the same family, and are good seed in different degrees.

a. The best seed producing the largest quantity of fine cotton, has brown tufts at both ends, but is clear in the middle.

b. The next has a brown tuft at one end.

c. The next is covered all over with a brownish down.

d. The next is covered all over with a greenish white down.

If the best kind is selected and planted separately, *i. e.* the kind, brown-tufted at both ends, it will produce many seeds, tufted only at one end, and gradually deteriorate. This best kind is only to be kept up by selecting that covered all over with brownish down, which produces a large proportion of those brown-tufted at both ends, *i. e.* best and finest.

The observations seem important, they may have been misunderstood, or they may be inaccurate. The only way of deriving benefit from them, if true, or of correcting them if false, is the publication of them to your friends, whose interest sharpens their sagacity.

—

Pawpaw Tree.—Flint describes the Pawpaw tree in the following language: he finds the greatest northern latitude in which it is found in the Valley of the Mississippi, at 41° north.

"*Pawpaw, (annona triloba, ficus indicus.)* This, in our view, is the prince of wild fruit-bearing-shrubs. The leaves are long, of a rich appearance, and green, considerably resembling the smaller leaves of tobacco. The stem is straight, white and of unrivalled beauty. In fact, we have seen no cultivated shrub so ornamental and graceful, as the Pawpaw. The fruit closely resembles a cucumber, having, however, a more smooth and regular appearance. When ripe, it is a rich yellow. There are generally from two to five in a cluster. A Pawpaw shrub, hanging full of fruit, of a size and weight so disproportioned to the stem, and from under long and rich looking leaves of the same yellow with the ripened fruit, and of an African luxuriance of growth, is to us one of the richest spectacles that we have ever contemplated in the array of the woods. The fruit contains from two to six seeds, like the tamarind, except that they are double the size. The pulp of the fruit resembles egg-custard in consistence and appearance. It has the same creamy feeling in the mouth, and unites the taste of eggs, cream, sugar and spice. It is a natural custard, too luscious for the relish of most people. The fruit is nutricious, and a great resource to the savages. So may whimsical and unexpected tastes are compounded in it, that, it is said, a person of the worst hypochondriac temperament relaxes to a smile, when he tastes Pawpaws for the first time."— *West. Geo. p.* 73.

Is the Pawpaw cultivated here, and if not, why not?

Food and treatment of Domestic Animals.—A large flock of young geese were tormented with lice on the head. A place under the store-house was prepared for their reception, so as to prevent exposure to the weather, and a small pillet of mercurial ointment rubbed on the top of each gosling's head at night; and when examined in the morning every goose of them was dead. In the like manner a sick hound was helped out of the world by the agency of a dose of calomel, a poor Terrier slut by a dose of Calomel & a young turkey, by being closely confined all night in a box.

Sympathy of the Pear Tree.—The best Perry in England was made some years ago at Worchester, from the fruit called the "Zeighton Squash."

The trees were all grafted from one tree; when the original stock decayed, all the grafts dwindled and died. Is this apparent sympathy peculiar to pear trees, or common to other fruit trees?

Wagons and Carts.—It is the general custom here to use upon plantations and farms, wagons drawn by horses and mules. If there be any advantage in the use of wagons, it would be most apparent in hilly countries, and yet among the hills of Westmoreland, carts are for agricultural purposes exclusively in use. The Board of Agriculture endeavoured to make them universal. Is the question settled in this country or still open for discussion?

Orange Trees.—Is there any cure for the small white insects commonly called cochineal, which are killing my trees. If there be, let me know it quickly, or it will be too late. Yours, &c. B.

ART. VI.—*Brief Notice of the Productions of Louisiana, being an extract of a letter to the Editor: by* J. B. BREWER.

"West Filiciana, March 15, 1831.

In reply to your Agricultural inquiries I can say but little at this time. Planting is not my profession, I therefore,

must reply in answer with such information as I can gain from the actual planter here, which, with pleasure I will communicate as I receive, it at different times, from different experienced planters. The prosperity of cotton crops here, have for several years past been favourable; the rot continued by degrees to disappear, owing, it is presumed, to the change of seed. The introduction of Mexican seed, is now general in this section of country, and I believe through this State generally. The cotton crops for 1830, were far superior, in Louisiana and Mississippi, and much beyond expectation—no complaint of rot any where. Some reports state, an average of ten bales to the hand, some eight, and some six bales, accounting 400 pounds per bale. Be this as it may, it is reasonable to believe, that six bales per hand, or from five to six, is about the general average, or perhaps nigher the truth. When cotton was 18 cents in market, three bales was a general average, 400 lbs. × 18 = $72; (then the rot prevailed.) Now say six bales at 9, as an average price 400 lbs. × 9 = $36, then 72 × 3 = 216; rot, 36 × 6 = 215 no rot.

The bailing, cordage, and other incident expenses of three bales per hand must be deducted, which will reduce the average of six bales per hand to a less profit than three, agreeable to the above calculation.

The grape-vine, is cultivated, by some gentlemen in their gardens here, but to no extent. I have amused myself in cultivating the native vine, together with some foreign articles. I have ingrafted the foreign into the native vine, some of which have done well. The dry season, last summer, injured many and some have died, but I am confident that the grape may be cultivated to advantage. I will, hereaftet, be more explicit on this subject, and also upon the subject of the silk worm, which I have also tried.

Yours, with respect,

J. B. BREWER.

ART. V.—*Description of a Cow-House and Milking Pen: by* C.

"Western Circuit, Georgia, September 29, 1831.

Dear Sir,—I have to acknowledge the receipt of your favour of the 7th inst. and regret the occasion of its having been necessary to remind me of the promise made in a former communication, on the arrangement of the cow-pen and dungstead; but an unusual degree of ill-health for some months back, together with the infirmities naturally attendant on an advanced age, must plead my apology for its not being fulfiled as early as anticipated. It will be recollected that in the communication referred to, I promised to give a sketch of the cow house and milking pen, and also the calf and sheep-pen attached, and then to state the usual mode of preparing the land and application of manure to that, intended for cotton. As the planting season has long since passed, I propose reserving the latter part for a subsequent communication, and in the present, endeavour in part to comply with your request, in giving a brief description of the cow-house, milking pen, &c. as promised.

As this is an appendage not common in this climate, (never having seen one since my residence in the up-country) I would premise, that being a first attempt, it is highly probable the plan, by a great proportion of your readers, may be considered more curious than useful. But to proceed, the cow-pen described in the communication before alluded to, is stated to be of a rectangular form, its dimensions 200 feet from north to south, and 60 from west to east, having a descent of perhaps 16 or 18 inches in the latter direction; a square of 60 feet in the south end is fenced off for a milking pen, and in the north-west corner of this (its north end forming a part of the dividing fence between the stock and milking pen) a building is erected, so arranged as to answer three different purposes, and denominated the cow-house. It is simply a log-cabin raised on posts four feet from the ground, the space beneath enclosed around except the south end, which opens into a small lot intended for the calves and sheep. In the floor of the house or loft a space of two feet is left along the east side, under which a small rack is fixed for their use, there are three entrances into this lot, one under the north end of the house from the stock-pen, ano-

ther through the dividing fence between the calf and milking pen, south of the house, and a third from the stock into the milking pen, thus opening a communication between the stock, milking and calf-pens, so that the milking cattle, calves and sheep can pass without interrupting each other. A covered shed, nine feet wide, is attached to the east side of the house, divided into stalls four and a half feet, having a rack and trough running across the end of each, adjoining the side of the house. Immediately above the rack, an aperture is made nearly its whole length, and sufficiently wide to admit the dry food being thrown through from the loft into it. To the upper side of this opening a light hanging gate is suspended on pivots, so as to be easily raised, having a stay to support it while passing the food through into the rack, after which it is let down to prevent poultry from getting in; the stalls are secured with sliding bars while the cattle are feeding, after which they are left open for them to go out or in at pleasure. The interior of the loft is so arranged as to hold the greatest possible quantity of forage for the winter, a narrow passage only being left along the side of the calf and sheep-rack, before mentioned, this being immediately under the aperture, through which the food is distributed to the milking cows, a board of a suitable width is laid over it with hinges so as to admit being raised up while feeding the calves, &c. after which, it is let down and serves as part of the floor to stand on, while throwing the food through into the cow-rack; this precaution is necessary to prevent accidents, arising from carelessness, particularly as feeding the cattle, freequently takes place in the dusk of the evening. I have only to add, that the door is in the north end of the loft, having a platform before it, which extends across the water-drain, west of the pen, this being the same height of the floor, (4½ feet) admits wagons to run along side and unload, facilitating the operation of depositing the fodder in the loft with little or no loss. There are also steps to ascend the platform on the outside, and descend on the opposite, down into the stack-pen.

It would be unnecessary to make any comments on the advantages resulting from the foregoing arrangements. If I have rendered myself intelligible, the reader will be enabled to draw his own conclusions. Should health and leisure permit, I may at some future time add some remarks derived from my own experience, respecting the comparative advantages re-

sulting from comfortable shelter combined with suitable food and regular feeding, in obtaining a greater quantity of milk and butter, and increasing the value of the cattle. At present, my limits will only allow me to subscribe myself very respectfully, dear Sir,

Your obedient servant, C.

ART. VI.—*The Successful Planter, or Memoirs of my Uncle Ben: by an* EDISTONIAN.

(Continued from page 572)

It was the first dawn of the new year. The shade of night had just worn away; and the morning twilight, introduced by the clarion notes of the cock, foretold a pleasant day. My Uncle was up; and as he looked out upon the scene, nature appeared to him, never so beautiful. He offered up a prayer to its beneficent Author; then, taking up his horn, which had once been the hunter's call, he sent its sound, through the surrounding woods, with a melody, which he had never felt until then. It was the call to labour; and just as the sun, threw his faint, glimmering light, through the forest leaves, the labourers, were seen, for the first time, preparing, with their master, for the works of the day. A picture was now presented, which the parish had never before seen. My Uncle, nevertheless, determined to become, if possible, a perfect original. As he had marked out for himself a rule of conduct, he resolved to impart it fully to all about him. It was with this design, that he frequently admonished, and conversed with his people, on subjects which related to his and their interest. Thus it was, that, he more frequently won their attention and labour, by such mild means, than if, he had used those which were more severe.

The workmen, had already collected, and were ready for the labours of the new year. My Uncle looked upon them with pleasure, and as a kind director addressed them in the following language—"My boys, this day, we com-

mence a new life. The year opens itself in beauty and by the mildness of its sky seems to promise us a happy course. But, my boys, every thing depends upon our exertions. If we are idle, the seasons will favour us in vain—instead of helping, it will disarrange every thing; and when the time comes for us to gather our harvest, we will have none to gather. My boys, continued he, you know, that your children cannot grow up and live, if you neglect to clothe and feed them. You know, they must die. So it is with your crops; if you do not feed them with your labour and care, they too will die, like your children. We will have nothing to make us comfortable and happy; and when our friends visit us, we will feel poor and ashamed; because we will have nothing to offer them. But if we attend well to our business, it will be otherwise. And what the season will not do for us, we will do for the season. Let us work then faithfully, that we may be happy. Thus, when our friends come to us, complaining, that the seasons have not done well with them; we may point to our store-house, filled with provisions, and say—'we have plenty because we worked for it.' They will praise such conduct and be ashamed at themselves. But, my boys, this cannot be done unless you work diligently. And to work diligently is very easy. For when you have a field to hoe, which appears large; do not say, 'this is a large field; and we can never get through hoeing it.' But say to one another, 'here is a large field, let us divide it off into portions, and let no one of us stop, until he has finished his part.' In this manner, you will make large things appear small; and you will finish your work in a short time, and have leisure for amusement and rest. You must be up early; so, that, when the horn calls, you may be ready to answer to your place. Let every one be present before his time, and complaints can never rise against him. Attend now, my boys, to what I have told you, thus our ways will be pleasant—there will be no quarreling amongst us: and God will love us for our conduct. We will now go into the fields, and let every one do the work diligently which I shall apportion to him."

Never did an appeal go more forcibly to the hearts of an audience, than did this of my Uncle. He spoke to untutored men, in untutored language, facts which they all felt to be true. Their countenances seemed to bespeak

their favourable intentions. "Master speaks very true," whispered they, "we will all try to follow his good words." The reader, in a very few minutes after, might have seen them, cheerfully performing their several tasks for the day. My Uncle Ben, was not satisfied to apportion their works, and expect its accomplishment, without further trouble to himself. He viewed his workers in the same light, that a skillful teacher views his young beginners. He remained with them, and pointed out every difficulty that arose. Thus, if he beheld one, who came on slowly, he examined to what cause it was owing. If it arose from inexperience in such work, he pointed out the best mode to pursue. If any one handled his hoe unskilfully, he was not ashamed to take it from him, and by doing the work properly, instruct the inexperienced how to proceed. If he observed one standing in an awkward position, by standing himself aright, he taught the worker how to attain an easy attitude—and so on: wherever he could see a defect, he endeavoured to remedy it, by setting the example himself. The men beholding this, soon gained experience; and they all went on in their tasks with the greatest pleasure and expedition. They returned from their labour this day, sooner than they had ever done before. They deeply felt the kindness and wisdom of my Uncle's conduct, and resolved, as they returned homeward, to do as he directed. He soon observed their willing disposition, and as he never let an opportunity slip of complimenting, where compliment was due, he determined to thank them for their conduct. Accordingly, when he had come to the mansion, he stopped them, and said to one, "Tom, you worked with much experience and skill;" and to this one, he said, "Cudjo, you improved very much by my instruction"—and so on, he complimented them all. He then dismissed them, admonishing them to be ready at the call of the horn on the morrow. Thus did every one go away well pleased at the notice paid him, and their after-conduct faithfully proved, that they did not disregard the admonitions of their master.

(*To be continued.*)

PART II.

SELECTIONS.

Art. I.—*On the Acclimating Principle of Plants.*

[FROM THE MONTHLY AMERICAN JOURNAL OF GEOLOGY, &c.]

It is nature's plan, that nothing should remain fixed and stationary. She exists by motion, and manifests herself through endless changes: even death and decomposition are her pioneers, to prepare the way for life and existence. The very rocks and minerals (unorganized matter,) are changed by the action of the elements, from new affinities, and yield to the circumstances of moisture and heat, with which they may be surrounded. Animals exhibit still more changes; they possess powers of developement, and the means of continuation of kind. Endowed with locomotion, they can change their climate and habitation: with a natural pliancy of constitution, they can accommodate themselves to the quality of their food, and character of the country upon which they may be thrown, and appear beautiful or deformed accordingly as they may be acted on by circumstances. Many of them can bear the most violent contrasts of heat and cold, and adapt themselves to many climates.

Vegetables too, are organized, have their growth and decay, and the powers of reproduction. Beyond this we allow them but few capacities; no locomotive powers, none of the sensibilities common to animals, nor that pliancy which can accommodate itself to circumstances. They are the fixtures of nature, with but little latitude in which to flourish, and but little diversity of soil from which to derive nutriment. The object of this paper is to enlarge their sphere, and to show that they possess more power to change their climates, and capacity to bear the contrasts of heat and cold, than we have generally ascribed to them; to illustratate it with many instances where they have actually adapted their growth and habits to a great extent of country, and diversity of latitude, and to urge agriculturists to make more efforts to vary their culture.

Plants have *directly* no locomotive powers, but *indirectly* they have in a great degree the faculty of changing their places, and,

consequently, their climate. The embryo germ wrapt in a kernel, or seed, is virtually a plant, ready to germinate when thrown upon its parent earth, and affected with heat and moisture. It is in a most portable shape, and can be transported with ease to an unlimited distance. Nature in many instances superadds to seeds, wings, down, feathers, and chaff, by which they become buoyant, and are carried by the winds of heaven, by the storms that sweep the forest, and by the streams, and currents of rivers, and the ocean, to an immense distance, and through many degrees of latitude! They become finally deposited in some genial soil, and at one remove, or through a succession, they occupy extensive regions. Nature manifests her great care of the embryo by coating some of her seeds with shells, which protect them from the attacks of insects, and the action of the elements; others have bitter, narcotic, or poisonous qualities, which forbid animals eating them; and many are filled with oily, or resinous matter, which resist for ages, and even centuries, the action of elements, unless acted upon by the proper degree of heat and moisture. By such qualities they endure, and await a suitable time and conveyance to their destined place, in order to extend and vary their families.

Birds also convey the seeds of plants in their crops over a wide extent, before they become triturated and digested; and when these winged carriers die, or decay, from accident or age, the seeds are deposited, and take root in some distand land. Animals also convey them in their stomachs to a considerable distance, and pass them uninjured by the powers of digestion.

Man, more provident than all, to whom plants are necessary, whose support, whose comforts, and whose pleasures connect him with them, carries their choice seeds, slips, and scions, far and wide. His interests foster their growth, his attentions enrich their products, and his skill and science preserve their existence, and adapt them to their new condition. In an improved community, man's wants multiply: he has occasion for the more varied and rich fruits; more abundant and luxurious clothing, and furniture of vegetable growth; odours to regale his senses, vegetable flavours to pamper his appetites, and all the medicinal plants to heal his various diseases, and invigorate his shattered constitution. He attaches himself to agriculture and horticulture; plants become his companions, he carries a creative resource into those departments, and by his attentions, forms new varieties and excellencies, unknown to the wild state of vegetable existence. Such are the means nature has provided for the propagation and extension of plants; such are the indirect locomotive powers they possess. We must no longer, therefore, consider vegetables such inert and sluggish beings.

We will now treat plants as having a kind of locomotive existence. We know that they are very perfectly organized, have

sensibility, and sexual intercourse. We know that they have lungs, by which they breathe, and are connected with the air. We know by abundant experience, how easily they are affected by the elements, by heat and cold, moisture and drought. We know how radically soil affects their productiveness, how immediately they are stinted or stimulated by the nature of the extraneous circumstances with which they are surrounded. Beings, therefore, that have such perfect organization, that although they are fixed in their places, are deeply changed by every shower, and every breeze, and every stroke the of cultivator—beings, so necessary to the wants, and very existence of animated nature—should possess, in a high degree, the faculty of changing their climate, and of accommodating themselves to circumstances, aed the strong contrasts of seasons. Nature else would be wanting in her usual fore-sight, and in her adaptation of one thing to another.

If an animal is carried by accident, or its own wanderings, to a country or climate that is not congenial to its nature, it can and does make use of its locomotive powers, to regain one that is more suitable to it. This happens every day. Thousands of birds and fish, and other animals, migrate regularly, to avoid even the different seasons of the year, and could not, with all their versatility of constitution, exist without it. We may infer, then, that plants, which, after having rooted themselves, cannot migrate at all, should be endowed with faculties to bear all the changes of the seasons, and even of climate, in the same dull place of their existence. *They are so endowed*, and can often bear more changes, and support more disasters of storms and ravages of insects, than animals; and often continue to flourish under violent and sudden changes.

Human care, and the providences of nature, have given to many plants a great extent of climate and latitude, an enlarged growth, and an increased and improved product. Let us bring together such instances as are within the knowledge of all, and which ought to stimulate our cultivators to greater efforts.

The valley of the Euphrates was doubtless the native region of all those fine and delicious fruits which enrich our orchards, and enter so largely into the luxury of living. We thence derived all the succulent and nutritious vegetables that go so far to support life; and even the farinaceous grains appertain to the same region. The cereal productions began in that same valley to be the staff of life.

Our corn, our fruit, our vegetables, our roots, and oil, have all travelled with man from Mesopotamia up to latitude 60°, and even farther, in favourable situations. The cares of man have made up for the want of climate, and his cultivation atoned for this alienation from their native spot. The Scandinavians of Europe, the Canadians of North America, and the Samoides

of Asia, are now enjoying plants which care and cultivation have naturalized in their bleak climes. Melons and peaches, with many of the more tender plants and fruits, once almost tropical, have reached the 45th degree of latitude in perfection, and are found even in 50°. Rice has travelled from the tropics to 36°, and that of North-Carolina promises to be better than that of more southern countries. The grape has reached 50°, and produces good wine and fruit in Hungary and Germany. The orange, lemon, and sugar-cane, strictly tropical, grew well in Florida, and up to 31½°, in Louisiana, and the fruit of the former much larger and better than under the equator.

Annual plants grown for roots, and vegetables, and grain, go still farther north in proportion, than the trees and shrubs, because their whole growth is matured in one summer; and we know that the developement of vegetation is much quicker when spring does open in the countries far to the north, than in the tropics. In Lapland and on Hudson's Bay, the full leaf is unfolded in one or two weeks, when spring begins, although it requires six or eight weeks in the south. Nature makes up in despatch for the want of length in her seasons, and this enables us to cultivate the annual plants very far to the north, in full perfection. The beans, pumkins, potatoes peas, cabbages, lettuce, celery, beets, turnips, and thousands of others, seem to disregard climate, and grow in any region or lattitude where man plants and cherishes them. The fig is becoming common in France; the banan, pineapple, and many other plants, have crossed the line of the tropics, and thousands of the plants valuable for food, clothing and medicine, and such as are cultivated for their beauty, fragrance, or timber, are extending their climates, and promise much comfort and resource to man. Plants lately introduced, whose cultivation has not run through many ages or years, have required but little latitude in their growth, and show but little capacity to bear various climates, because time has not yet habituated them to such changes, and human cares have not imparted to them new habits and new powers.

Nothing can be effected by suddenness in *acclimating* plants; too quick a transition would shock them; it must be a very gradual process, embracing many years, and many removals. The complete success that has attended the plants first named, the earliest companions of man, proves this. In the more recent plants success is exactly in proportion to the length of time that a plant has been in a train of experimental culture.

The most striking method of testing the effect of climate on plants, is to carry suddenly back to the south, such as have been extended far, and become habituated to a northern climate. Such plants have so much vigour, and the habits of a quick and rapid growth so firmly fixed on them, by a long residence in the north, that when suddenly taken to the south, although the sea-

son be long and ample, they continue, from habit, to grow and mature quick, and obtain the same rare-ripe; because they do not take half of the time to mature, that those of the same family require, which have never been so changed. Gardeners give us early corn, peas, fruit, and turnips, by getting seed from places far to the north; and cotton growers renew the vigour of the plant by getting the most northern seed. This practice is common in the case of most plants, and is founded on the supposition that plants do, and can acquire habits.

The fact supported in the first number of the American Journal of Geology and Natural Science, "that plants are most productive near the northern limit in which they will grow," that they bear more seed or fruit, and have more vigour of constitution, offers much encouragement to agriculturists. This proves that it is not a meagre, stinted existence, devoid of profit or productiveness, that we give to plants, by pushing their culture far north, but a strong and healthful grow, one that repays the labour and attention, by a greater product thas belongs to more southern situations.

Every view that we can take of this interesting subject, every fact within our knowledge, whether drawn from the actual state of cultivation, or from physiological investigations into the habits, nature, and construction of plants, goes to show that plants do become acclimated, both in the natural and artificial way, to a great extent. Enough has been witnessed to prove that plants have a physical conformation, that does accomodate itself to circumstances, and have capacities more extensive than are generally ascribed to them: enough has been realized to encourage farther efforts, and to give us hopes of much future benefit.

In this enlightened age, where invention in the arts and mechanical philosophy, is changing the whole order of our social economy, where new comforts and resources, unknown to our fathers, are daily developed, and, as it were, created; in this age, where labour-saving machinery is redoubling the productions of the arts, almost exempting man from in-door exertion, and cheapening all the elegancies of clothing, furniture, buildings, and books, until luxuries are common to rich and poor, and education within the reach of all, why should not agriculture awaken, put forth its energies, and partake of that spirit of improvement that is working its magic in all other departments? Why does it not avail itself of that knowledge of the nature of the soil, which chemistry gives? Those tabular statements of tho weather and climates, which naturalists furnish? Those philosophical investigations into the nature and habits of plants, which have been presented? And that labour-saving spirit that seems to know no limits in other branches of business? Why should all our capital improvements fly the open fields, where culture exists, and be realized only in cabinets and manufac-

tures? Agriculture follows the old dull routine, and its products lumber on to market in heavy carts, whilst all other branches move on, aided by a thousand inventions, with ease and despatch That field, whence our food is derived, and on which our very existence depends, lies neglected, whilst we cultivate luxuries to a morbid excess. Every thing is cheapened but human food; every thing becomes annually more attainable, but the necessaries of the table. If this disproportion between the arts and agriculture continues to advance, we are destined to live in a sort of spendid pauperism: enjoying the luxuries of fine houses and furniture, we shall enjoy every thing to satisfy but bread. W.

Art. II.—*Planting of Hardy Evergreens*

[FROM THE QUARTERLY JOURNAL OF AGRICULTURE.]

By Mr. Macnab, Superintendent of the Royal Botanic Garden of Edinburg. Mr. Macnab says that he has planted evergreens at all seasons of the year, with more or less success, though from the middle of June to the middle of August, is the most unfavourable time for planting them. The particular seasons which he recommends, are late in autumn, or during winter, or very early in spring; that is, from the middle of October till the middle of February. And of this period, he recommends, as the best, from the middle of October till the middle of December, provided the weather and the ground be favourable; that is, provided there is no frost, no drying wind, nor much sunshine, and the ground is not too much saturated with wet, either from continued rain, or from the nature of the soil. Mr. Macnab also differs from others in the treatment of the plant, when putting it in the ground. Some recommend, when the plants have been long out of the ground, to be particular in drying their roots, by exposing them as much as possible to the sun and air, and not to be nice in planting. But the following are Mr. Macnab's views on this subject:—"One of the principal things to be attended to in planting evergreens," says he "is to fix on a dull day for winter planting, and moist day for spring and autumn planting. There can be no secret in the proper treatment of evergreens. If there were, I should say, that it is in preventing their roots from becoming dry, when out of the earth; to choose moist and cloudy weather for planting; and still better, if we had the power, by foresight or otherwise, to se-

cure a continuance of such weather some time after they have been planted. If the roots of evergreens be allowed to dry when out of the ground in spring, it is scarcely possible to prevent their suffering considerably, and showing this injury a long period after they were planted." And hence he recommends the winter months as being those in which we are best able to attain these purposes, the day being in general moist and cloudy, and even when it is sunshine, the sun being such a short time above the horizon, and its influence so trifling as to have little effect. But where that kind of weather cannot be obtained, he then recommends the work to be performed in the evening, after the sun gets low, particularly in spring or autumn planting. The following are his directions for the details of planting:—

"In planting evergreens," says he, "whether in a dull day, a wet day, or a dry day, it is very necessary to keep in view the expediency of keeping the plants for as short a time out of the ground as possible; if only a few minutes, so much the better; and, in all cases where it can be done, where great numbers are planted, we should, if possible have some men stationed to take up the plants, others to carry them, and a third set to put them into the ground. In all seasons, situations, and soils, the plants should be well soaked with water, as soon as the earth is put about the roots." Though he recommends universally the practice of watering immediately after planting, he remarks that the urgency of the case is less where the evergreens are planted in winter, to form underwood in extensive plantations; and that the deaths, without watering, will be so few that they are not worth avoiding, where it costs much expense and trouble. "As soon as the plant has been put into its place," continues Mr. Macnab, "the earth should be filled in, leaving a sufficient hollow round the stem, and as far out as the roots extend, to hold water, which should then be poured in, in sufficient quantity to soak the ground down to the lowest part of the roots. In short, the whole should be made like a kind of puddle. By this practice, which is particularly necessary in spring and autumn planting, the earth is carried down by the water, and every crevice among the roots is filled. Care must always be taken to have as much earth above the roots of the plants as will prevent them from being exposed when the water has subsided." An old birch-broom, or any thing similar, he observes, ought to be laid above the roots, to break the fall of the water when it is poured upon them, and to prevent the roots from being washed bare of such earths as may adhere to them. This thorough watering is so indispensable, that it is to be applied even though it should be raining at the time of planting. After the water has been absorbed, the earth should be levelled round the stem of the plant, and as far out as the water has been put on, but not trodden. If the plants are large, a second watering is sometimes necessary;

but, in ordinary-sized plants, one watering is quite sufficient; and, after remaining twenty-four hours, more or less, according to the nature of the soil, the earth about the stem, and over the roots, should be trodden as firm as possible, and, after treading, should be dressed with a rake.

Art. III.—*Different Varieties of Poultry.*

[FROM THE NEW-YORK FARMER.]

Mr. Fleet,—Encouraged by your repeated invitations to your subscribers to contribute to the general stock of information, by stating their practical knowledge of rural economy—I submit to you the following remarks, if they be of sufficient worth to fill a vacant corner in your useful repository. Perhaps it may be necessary to state, that I have been for many years intimately acquainted with the art and mystery of breeding and rearing of game fowls, as well as most other varieties, and at some periods in very large quantities, and as each variety has its peculiar qualities, so some are better calculated for particular situations and purposes than others. This truism would seem absurd here, did I not know that generally, farmers and others who keep fowls, at first gain their stock by a purchase of some half a dozen hens and a cock at market, without any selection, or choice of more importance than colour. At some farms I have visited, so little attention has been paid to this object that a sufficient number of eggs and poultry for home consumption have not been raised. Now as the most inferior fowl requires the same quantity and quality of food as the superior—I cannot see why our markets may not as well be supplied with varieties of superior breeds, as well as with the present diminutive and unprofitable class. First, then to those who rear them for the table, I would recommend the large varieties of the Canton or Malay breed; they attain to a great size, frequently weighing 10 or 12 lbs., the former are generally the largest, and when true bred, are yellow striated with brown. They are but indifferent as layers, and set unsteady. These gigantic fowls are sold as high as $2 per pair. As layers, I know none equal to the Poland fowls; they are excellent, and are sometimes called in Europe everlasting layers. They are very scarce here, and will readily fetch $2 a pair in the New-York markets. They are tolerably hardy, very peace-

able, and their plumage must be a shining black with a large white top-knot and a king David's crown on the head—there is a variety perfectly white, but I do not think it the true breed, or equally good. The Darking fowl is an imported English breed, and in size nearly equals the Malays; they are good layers and good nurses, they have often five toes on each foot; their original plumage is clear white, capacious body and short legs. Those of this specie are usually preferred for capons. The Dominique or common dung-hill fowl, from its innumerable crosses, cannot be depended upon, some will be excellent layers, others useless either for the nest or table. They are the smallest variety and are to be seen every where and of every colour. The Bantam, an Indian variety, extremely small, valued as a toy; they lay well, their flesh is extremely delicate, and from their small size may personate a chicken, when others are not to be procured for the table; they are of all colours, but those the most variegated, or perfectly white are the most esteemed; the smooth-legged are preferrable; they are less liable to colds from the wet and mud continually clogging in the feathers around their feet; while setting also, the feather-legged are apt to draw out the eggs with them on leaving their nest. The game fowls I purposely omit; though extremely beautiful they are not to be recommended; if true bred, their quarrelsome disposition counterbalances every thing. I have had the whole brood stone blind; they commence fighting almost as soon as out of the shell: mine from their good feeding and hot nature have laid all through the winter. A good supply of clean water is absolutely necessary, and barley or cracked corn mixed with one quarter of sea-sand, is their best food; dry and warm shelter in winter, if you wish for eggs either in summer or winter. Ten or twelve hens may be allowed to one rooster.

I may offer you a drawing of some variety of fancy pigeons and rabbits, with a few remarks when I have sufficient leisure to complete them. D. F. A.

Art. IV.—*On Silkworms.*

[FROM THE AMERICAN FARMER.]

"Mahon, June 23, 1851.

My Dear Skinner,—I send you inclosed the original, in Spanish, and a translation, of the mode of breeding silkworms, and

regret that time does not admit of my going into a detail as explained to me of the manner of making silk. It is a very simple manner.

When the cocoons are formed, and the butterfly has been killed by exposure to the sun, they are thrown into boiling hot water, a handful of slender twigs of birch or any other convenient and suitable tree, are made into a short broom, the soft end of which is thrust by the hand in an active motion on the cocoons and detaches from them the silk which another person is employed in reeling off on a reel made of a piece of fishing cane about two feet long, with two short transverse pieces near each end. After which it is placed on a distaff and spun off by hand as you spin flax. I send you a specimen of this domestic silk of which large quantities are made in the island.

I leave here to-morrow or next day for Naples, in the John Adams, on my way to Constantinople, when I hope to be able to devote some of my time to objects of general utility, unconnected with my public duties.

The pine seeds will be delivered to you by Captain Gordon of the navy, who will have also in charge a present for Mrs. Skinner to ornament a side-table or mantlepiece, and which I doubt not she will be pleased with.

With my best wishes for you and her, as well as the boys, believe me truly yours,

J. S. Skinner, Esq. DAVID PORTER.

P. S. I send you a twig of the proper kind of wood to make the brush of to separate the silk from the cocoons, and I much doubt whether any other will suit so well, you will perceive that it must have sufficient roughness to catch up the silk from the cocoons. I also send you a few eggs which were produced under my own inspection.

Secrets of the Silkworm, its Utility, Diseases and Remedies.—To rear the Silkworm, it will be necessary, in the first place, to select a suitable room. This should be rather high, than low, in a good atmosphere, perfectly dry and well furnished with windows, that the sun may penetrate it, in the morning and evening. These windows should be well closed and be covered with glass or fine stuff of some sort, that they may be well shut up, whenever rainy, windy or cold weather, may require it. It is very necessary to observe the weather, for the Silkworm is very delicate under all circumstances. Nets spread before the windows will also be a good precaution to prevent swallows and other birds from devouring the worms. Care should be taken that the walls of the house be clean, and without holes or chinks, through which rats might enter, and destroy or injure the worms.

The room should be furnished with upright pieces of wood or studs, with cross-bars, and upon these, are to be laid shelves made of small canes. Before the worms be placed upon these shelves, they should be sprinkled with a little good vinegar, and then rubbed with odoriferous herbs, southern wood, &c. These worms are fond of sweet odours.

As soon the mulberry trees begin to bud, the leaves will be plucked for the worms if they be hatched. But if the eggs, which have been preserved during the winter, should be hatched before the mulberry trees begin to bud, the worms may be fed on the tender leaves of elm, nettle or lettuce.

In hatching the eggs of the silkworm, they will first be put into tepid white wine, or malvasia. The good eggs will be known their sinking to the bottom of the vase, and the bad by floating. The former will then be spread out upon a plate or board, covered with a sheet of paper, and exposed to the sun.

The season of hatching the Silkworm egg, is the month of April, a little earlier or later, according to the climate. They should be hatched between the new and full moon; for the worms hatched at this period, spin larger, finer, and harder *cocoons*, than those hatched during the last quarter of the moon.

The following is the mode of hatching the Silkworm egg. After they have been put into white wine, place them before the fire, and as soon as you perceive them to be about to hatch, put them into a small wooden box and lay over them sheets of white paper punctured with holes, larger than those made by pins, and upon the paper, place one or two young mulberry leaves. As soon as the worms are hatched they will fix themselves upon these leaves, and with these, they are to be transferred to the shelves of reed or cane. Tender mulberry leaves will then be given to them, morning and evening. They will spread from leaf to leaf, and their food must be increased daily, until they have completed their fourth sleep. If the leaves should at any time be humid or wet, they must be dried with a warmth cloth. The leaves must be gathered from the tree, after the sun has passed over them, that they may be perfectly dry.

The Silkworm has four sleeps, when it changes and sheds its skin. When it has had its fourth sleep and changed its skin, it then devours more food than usual, until the body becomes somewhat bright, and then the thread of the silk is sometimes discovered. Much care is required at this moment; small brush wood and branches of trees, should be prepared and arranged around the shelves, and they must be perfectly dry. Moisture is very injurious. The branches should not be too close together, nor should very many worms be upon each shelf of cane. The worms may thus spread out upon the branches, and several will be prevented from spinning their cocoons together.

Whilst the worms are seeking to rise to perform their work, they must not be left alone, until they have, all of them secured a place on the branches. They proceed in search of their places with great precipitation; hence some fall to the ground. These should be replaced on the branches. The cocoons are spun in two, three, or four days.

Six or seven days after the cocoons are spun, take them from the branches, and select those from which you may wish to obtain eggs. In fifteen or twenty days, the butterfly comes forth which lays the egg.

The cocoons that are destined for silk, must be laid in the sun, to kill the worm or butterfly within.

Of the cocoons intended for silk, those of a yellow colour are better than the red; and the white ones are of the least value.

Cocoons containing the male worm, may be distinguished by their being longer and somewhat pointed; whilst the female cocoons are rounder and fuller at the end. The male butterfly is known by being thicker and fatter than the female, and a little darker. They are stronger than the others and lay more seed.

The sooner the silk can be reeled from the cocoons the better it will be. They should otherwise be secured from the dust and be well covered. In reeling the cocoons it is of the utmost importance to find a skilful person; for if they be reeled by one who has not had great practice, the loss that will be sustained is inconceivable. Experience will teach this truth.

The Silkworms are subject to several diseases, when the person attending them does not keep them clean until they have changed. They may also be affected by various winds or by a mid-day sun. These causes weaken them; and on this account they should be kept clean. The windows should be kept closed when cold winds blow, and a brazier of charcoal well lighted should be placed in the room. Incense should be thrown upon the fire, and also onions cut into little pieces. The worms love odours and are cured of their diseases by them. They may also be sprinkled with a little rose-water; and if they be diseased from having over eat themselves they may be cured by making them fast for two or three days. If some be found discoloured or red, with a certain humour upon the belly, which is injurious they should be immediately separated from the rest, and the healthful worms should be exposed to the open air, before rising of the sun, and after remaining a short time, they must be restored to their place. They should be sprinkled with a little strong vinegar, and the shelves should first be rubbed with southern wood or other odoriferous plants. They should feel the air and the sun for the space of an half hour in the morning, taking care that the rays do not strike them. The windows are so to be arranged that the morning air can enter.

It is to be remarked that the shelves should be cleansed every two or three days, the remains of the leaves that have been eat, and the excrement of the worms must be taken away, and then fresh leaves are to be given to them.

Art. V.—*On Bees.*

[FROM THE NEW-ENGLAND FARMER.]

Mr. Fessender,—In a communication made for your paper a few days past on this *inexhaustible* subject, I regretted not having received an answer from a gentleman in the western country, to whom I had written last autumn on the method of keeping Bees in the upper part of a house, or any other building. I do not enter into any controversy concerning these valuable insects, or the best shaped hives. My object is to obtain *honey* in the safest and easiest way, with little trouble or expense, and also I hope with a greater certainty of keeping clear of the bee-moth, from the greater elevation from the earth than the usual method.

I have this week received the letter I had so long been expecting, and now give it to you for publication.

Yours, &c.

Roxbury, April 12, 1831. JOHN PRINCE.

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"Versailles, Woodford County, (Ky.) April 30, 1831.

John Prince, Esq.—*My Dear Sir*,—Your friendly letter of October last was forwarded to me at this place, but did not reach this until my departure for the southern counties; consequently this is the first opportunity I have had, and must plead my excuse for not attending to your request sooner: and now as I have to regret that my friend Doct. Parker has not furnished me with *all* the information I require, concerning the management of bees; but he has kindly afforded me an opportunity of examining his bee-house, and if I possessed the power of description, you should certainly have it, intelligibly. This much is certain, that he has in his garret a great number of bees. He thinks about forty swarms at this time, all proceeding from one hive, put there about ten years ago. He placed the hive near the brick wall or end of his garret, leaving an aperture or small hole in

the wall, through which the bees passed out and in. A tight room was then made for them, such as may be made in the end of any house, leaving a door, which may be locked or bolted. The room must be tight, admitting neither air or light, or very little of either. A large box was then put into this room, say eight by four feet, one hive sawed in two, with small hinges on it, and fastened at the bottom by a bolt or lock, for the convenience of raising up and getting the honey whenever you may want. The hive being placed on the top of the box, and the latter having five or six holes bored in it by a small auger—as soon as the bees have filled the hive, they go down into the box, and never swarm until they have completely filled it. But you must have room enough in your house to keep them always at work. And this you may do by adding box to box; *and they will even then proceed to deposit their comb on the rafters of the house.*

Doct. Parker told me the other day, that he could now take from 50 to 100 weight of honey-comb without disturbing, or even seeing a bee. We have also a bee-house in the yard—three sides planked up, as other framed houses are; we have framed a box the whole length, say fourteen feet; this box is eighteen inches wide and about twelve deep, with holes bored all along the top, over which the hives are set or placed—the front part of this box is full of holes for the egress and ingress of the bees—they directly go up through the box into the hives, fill them, and then go to work in the large box, so that you may take the hive off as soon as filled and place another there, so that there is no necessity of ever killing a bee. You can fasten the hives on the box, by running a bar of iron or wood through each end of the house, and putting a lock on it so as to prevent robbery. The lock is placed in the end of the iron, outside of the house.

We have several other plans, or methods of raising bees in this neighbourhood—such as small brick buildings, and putting the hives in them, leaving holes in the wall for them to go out and in at, having a door in the back or front, as you please. We also have the hives placed in the top of the porticos or porches, boring small holes in the plank for them to go through. In truth, there can be no difficulty in having plenty of honey, if we devote any time to making a house for the bees.

I am, &c. &c. P. N. O'BARNUM.

Art. VI.—*Remarks on the Curculio.*

[FROM THE NEW YORK FARMER.]

I have been endeavouring to collect some materials for a paper on this formidable insect, but these are far from being completed. It may be more useful to mention the little that I do know, however, in this stage of the inquiry, as it may stimulate others, than to wait till I could speak with more confidence.

The 3d volume of *Say's Entomology*, I have not examined, and know not its contents; but I suspect that our *Curculio* is exclusively *American* and that we shall not find it in any European work. I have doubts also whether the insect described by W. Wilson, as perforating a peach stone, is the same as those which prove so destructive to our smooth skin stone fruit.

Soon after the blossoms are fallen from the plum trees we found our insect in considerable numbers among the branches; and on jarring the tree, they commonly drop, pretending to be dead. Several of my friends assure me that they have watched the movements of the female; that her manner of depositing the egg in the young fruit is similar to that of the *Curculio nucum* of Europe; and that while engaged in this business she is not easily shaken from the tree. They have also removed the *nit* and then the fruit healed with a scar. These worms when found in fruit nearly ripe, are much larger than those described by W. Wilson. On conferring with several persons who have examined our insect in its winged state (for I have no specimen) we think its length is one fourth of an inch. The colour is dark brown.

The worms found in pears, plums, and apples were considered as the same species by Dr. Tilton.

It is said that the worm escapes from the fallen fruit to the ground, and there remains during the winter.

The fruit of an old pear orchard in a pasture near Philadelphia, had been much infested by worms. At last the proprietor had it ploughed late in autumn or in winter, and scarcely a worm was seen the succeeding year. This effect was ascribed to the ploughing which turned the larvæ up to the frost.

As *an entomologist*, I am solicitous that this insect should be figured and described, and its manners well understood; but as a *cultivator of fruit*, I have no anxiety on the subject. I want no *premium* to be proposed for its destruction, because I consider the *problem* to be already solved. *One of my friends has had plentiful crops of plums for eighteen years in succession by keeping hogs in his fruit garden;* yet trees within fifteen rods of that garden, have annually lost all their fruit by the *Curculio*.

Art. VII.—*On Swine.*

[FROM THE NEW-YORK MEMOIRS OF AGRICULTURE.]

Little is necessary to be said on this subject, as probably no branch of husbandry is better understood in this State, than the raising of pork. As the old thin, long legged breed still prevails in various quarters, the sooner another is substituted for it, the better; besides, it is a gaunt, voracious animal, difficult to fatten, and having too large a portion of bone.

In breeding, the sow should be selected with great care: broad and straight backed, with wide hips; a great many teats; short legs and fine bone. Farmers differ much in their plans of raising stock for pork; some permitting their shoats to run at large eighteen months, till they are penned up to fatten; this is the most troublesome and least profitable way; others give them a range in clover pastures, and begin to fatten them earlier. I apprehend there is a much more profitable way, and attended with less trouble for those who have the right breed. According to the quantity of pork wanted should be the number of breeding sows kept over, and there should be no other hogs on the farm but the breeding sows. These, when they pig the latter end of March, should be fed in the most attentive manner with swill and shorts. The pigs from a full grown sow, will generally be twelve in number; these should be thinned to eight, as soon as they begin to feed freely out of the trough, should be weaned, and afterwards fed regularly with green tares, clovers, boiled potatoes, ground peas, unmerchantable corn, or any other nourishing food; turning them out every day into a small yard where there is a shallow pond for them to lie in. A remarkable breed of pigs which had been treated pretty much in this manner, were exhibited at the last Duanesburg Fair; when eight months old, one of them was slaughtered, and weighed exactly three hundred and eleven pounds: they attracted universal attention, and I certainly never saw such animals before. This method is attended with little trouble, and leaves so small a quantity of stock on hand to winter over, appears to me to be more economical in every point of view than any other which which is practised.

Art. VII.—*On the Culture of the Grape.*

[FROM THE AMERICAN FARMER.]

"Columbia, S. C. Sept. 24, 1831.

Mr. Smith—*Dear Sir.*—I rejoice much to see the increasing taste for the cultivation of fruit trees, and particularly of the vine generally through the country, and particularly Baltimore and its vicinity. Any thing, therefore, that will tend to elucidate the particulars of the culture of the vine, and extend the knowledge of its habits, must be useful, in some degree, and in this view it may not be useless that I give you an account of the disastrous consequences of the last most unfavourable season for this delightful fruit. With us all this summer has been an almost uninterrupted series of rains: such, I believe, as was never witnessed by our oldest inhabitants. The temperature has also been, with the exception of a very few days, much below our usual standard. The quantity of grapes on our vines was uncommonly great; but these continued rains produced a considerable rot in the early part of summer; and this never entirely stopped as it usually does, after a short period of time. The rains continuing, the effect on the grapes as they approached maturity, was of swelling the berries; many of which burst on the slightest touch by insects, birds, or, I believe, without being touched at all, and this attracting the myriads, the consequent devastation is almost incredible. Indeed, a lady in light coloured clothes could not safely walk under our our vine arbours without an umbrella, for it actually rained wine. This is not, however, the whole of the mischief done; but this juice of the grape which was thus *unlawfully running away*, compelled me to gather my crop for wine before the grapes were as fully ripe as it was desirable they should be, and this juice being chiefly made up of our superabundant rains, and not having had a sufficiency of dry heat, was exceedingly deficient in saccharine matter, as for example: last year the juice of my Lenoir grapes weighed, by Beaume's areometer full 13°; and this year it weighed only between 7 and 8°, and it required three quarters of a pound of sugar per gallon of must or juice to bring it to the same degree, viz. 13° that it weighed the year before without a single grain of it. The other kinds fared a similar fate, and it was the opinion of several of my friends, as well as my own, that in my garden alone I must have lost during the two weeks preceding the gathering of the grapes, near 100 gallons of wine; yet, notwithstanding this enormous deduction in the crop, I made from that alone about 260 gallons. Aided by an intelligent friend, we measured the ground planted by these vines, and it was found to be a little less than one-sixth

part of an acre; which makes it at the rate of 1500 gallons per acre of wine, *such as it is.* I say such as it is, for it cannot be supposed that wine made under such unfavourable circumstances, can possibly be of a superior quality, although I endeavoured, as much as was in my power, to supply the deficiency of saccharine matter in the fruit; yet having examined it particularly lately, I am induced to hope, I have succeeded tolerably well.

I tried this season the operation of ringing, otherwise called annular operation, on many vines, with a view of testing more fully its effects than I had yet done, and I found that, although it increased considerably the size of the grapes, and of the vines themselves above the operation, it had no effect in preventing the rot. Valuable effects, however, are produced by this ringing, which is, as you know, the taking off a ring of the bark clean to the wood immediately before the flowering of the vine or other fruit-trees. One of these is, that noticed above, of increasing the size of the fruit, and forwarding by eight or ten days, the period of its maturity, and if it be done before the blooming, (for it may also be done with advantage afterwards, even when the grapes have acquired near half their size) it has the valuable effect of preventing, in a very great degree, the *coulure*, (we want an English word to express this) which is the failure of the setting of the flower to fruit, to which severa lkinds of grapes are very subject. Another advantage obtained by it is, that if it be desirable to fill up a vacant space in a bower or espalier, &c. it may conveniently be done by performing the operation on a branch trained in that direction. Its effect is to increase considerably the size in length and thickness of the part above the ring, by which means the vacancy is easily filled up. This operation also being done on a vine which it is desirable to multiply, affords great advantages; for, if a flower pot, a box, or any other suitable thing is to be placed that the ringed part of the vine be inside, and it is filled with good soil, and gently and frequently watered when it may be needed, it will take root so well as to form an excellent vine the very next season. It has only to be cut off below the box or pot, close to the hole through which it was inserted, and carefully planted, without disturbing the roots, in a suitable place. Speaking of planting vines it may as well be noticed here that a plenty of room ought to be allowed for the spreading of the roots; for these extend much farther than most people are aware of, and I presume this is in proportion to the extension of the vine itself above ground. As a remarkable instance of this, I shall copy here a note which I received a few days since from a very intelligent friend of mine. It was as follows:—

"I have long thought that grape-vine-root extend further than is generally supposed, and I now have the proof. My gardener cut in two with the grubbing hoe a grape root, which I traced to

my artichoke bed, forty-three feet from the stem of the vine. There I lost it among my artichoke roots, which I would not disturb. At the point where I ceased to trace it, it was still as large as my little finger. The fragment of the root I send you (about 15 feet) will show the size. I have no doubt it extends from 6 to 10 feet further. The vine to which this root belongs, is eight years old and thrifty. It is our Columbia Madeira. This root run at the depth of $7\frac{1}{4}$ inches, through the bed, without dip. It ran some distance down a walk and crossed. Here it was $8\frac{1}{2}$ inches below the surface. Where I ceased to trace it in my artichoke bed, at the distance of 43 feet from the vine, the dip had become very considerable, a foot at least. This I attributed to the resistance it met with from a large root. You know we agreed this summer that the vine has a host of enemies above ground. I now have to report foes below the surface quite as fatal as any above. About fourteen years ago, I transplanted into my garden a vine of the small white grape; I believe it is the sweet water. It bore the second, third, and fourth years, but the two last the fruit wilted, and did not ripen; from that time it ceased to bear, and has dwindled away, the leaves becoming very small, the annual shoots few and wiry, and the whole vine having the appearance of decay. I had it dug up yerterday to ascertain the cause, and found the large roots had been eaten out, and only a shell left. After some search, I at length found the enemy, a large white worm, an inch and half long, with a reddish brown head, armed with a pair of hard forceps, capable of perforating wood, and working horizontally. He is as thick nearly as the common grub, but differs from him in several respects; he is nearly half an inch longer, the first half of the body has rugæ, and is larger than the latter half; he walks upon his belly, while the grub, you know, on a hard surface, walks on his back, and not on his feet. I found him imbedded in a large root, at the termination of his excavations, and with difficulty cut him out alive. I put the marauder on my mantlepiece, loosely wrapped in paper, intending to send him to you, but in my absence for some hours, he perforated his paper prison and escaped. I have not been able to find him.

"Against this enemy we may not be able to guard, but we may guard against another I am about to mention. I had to dig up a four year's old vine that stood in a new walk I wished to open. This wine had never been thrifty, nor borne fruit that I remember. I found the root in a decayed condition, and a nest in it of hundreds of white ants. They seemed to have hollowed out a large space between the bark and wood of the root. Possibly they may have found the root decayed, (I believe this the correct view of it) and on that account availed themselves of it to construct a nest. Our gardens are filled with myriads of these

insects of every description, which boiling water would readily destroy. With respect, &c."

The apparent importance to the vine of the long horizontal root mentioned here, seem to render doubtful the propriety of suppressing all the upper roots as it is recommended in almost all the books on the subject of the culture of the vine; but although I am not very fully satisfied on this subject, I incline very strongly on its propriety; for if the rotting of the grapes is caused chiefly by the alterations of dry and wet, it cannot be doubted that roots near the surface of the soil must yield at times a much greater supply of moisture to the vine than at others, and thus help in doing the mischief; whereas, if these roots are every year cut off and the lower roots can find an easy progress in a loose and good soil at a greater depth, they cannot certainly be as exposed to the effect of drought, or suddenly to an undue abundance of moisture.

If you think, Sir, that these desultory observations can be of any service, you may insert them in your most valuable agricultural journal.

I am, very respectfully, Sir, your obedient servant,

N. HERBEMONT.

On Packing Acorns for Transportation.—Mr. Smith,—I take the liberty of proposing to you the publication of the following addition to a piece signed "*Jesse Buel,*" in the American Farmer of the present year, No. 26, page 208, the necessity of which that gentleman probably overlooked. It is, that in order to secure the growing of acorns sent abroad, they ought to be packed in sand, moss, or any other substance likely to keep them from drying, and this ought to be done very soon, say within two or three weeks, at farthest, after they have been gathered. Without this precaution, not ten in a thousand will vegetate. This is the case with many other kinds of seed, such as chesnuts, walnuts, and other oily nuts. For want of attention to this object the kind intentions of many persons are very frequently defeated.

Yours, with respect, N. H.

PART III.

MISCELLANEOUS INTELLIGENCE.

On the circulation of Sap in Plants.—About two weeks since, we cut a handful of currant sprouts, for the purpose of sticking down in our garden; after taking out the buds, we buried the lower ends of them in the ground. The leaves had mostly fallen before they were cut, and the remainder were broken off at the time of cutting. Last week we took them up in order to place them where they were to stand, when we found that they had formed new roots, which had protruded through the bark of the shoots, from an inch to two inches in length. The weather during the time they were in the ground, was warm and favourable to vegetation. We mention this fact to show that trees and shrubs should be set as early in autumn as their growth of leaves will admit, in order that new roots may have time to form before the ground freezes, to support the plants during winter. We know from experience that many kinds of cuttings take root better when planted out in the fall, than in the spring; this is the case with most of our American varieties of grapes, which do not take root as readily as European varieties; this is also the case with different kinds of honeysuckles, (Lonicera) which take readily if planted in the fall, but are more difficult when planted in the spring; therefore those who would cultivate trees, shrubs, or vines by cuttings, are reminded that now is the proper time for cutting them.

Genesee Farmer.

Large Fruit.—We have never seen apples of such enormous size, as have been brought to this market this fall. It has not been uncommon to see loads which would weigh from twelve to twenty ounces each; and in some cases, they have been selected which would weigh twenty-two, three and four ounces. A pear was raised in Pittsford, which weighed forty-nine ounces and a half. We doubt whether any part of the United States has produced fruit of the same variety, of greater size and better quality than old Genesee.—*Genesee Farmer.*

The Melon Strawberry.—This is a seedling, raised at Aberdeen, and which has been declared by Dr. Dyce, of that city, to be the "finest variety in existence." "The size and shape of this fruit in a great measure, resemble the roseberry, but rather larger; the colour is very dark, the flavour exquisite, and the plant is an abundant bearer and forces well." The above description, together with two or three plants, were sent to Messrs. Malcom and Gray, of the Kensington Nursery, in the beginning of May last, by Mr. Alexander Diack, Secretary to the Aberdeen Horticultural Society. We have tasted in Mr. Groom's garden, Walworth, what are there called Diack's No, 1, and No. 2, which are excellent strawberries, and great bearers.

Gardener's Magazine.

Straw Protectors for preserving Fruit Trees from the Frost.—This straw protector consists of small handfuls, averaging not more than two or three dozen of straws each, tied together at the root end, and suspended from the

wall, beginning at the bottom; so that the ears of one range of protectors will always overlap the root ends of the other range, in the manner of thatch. This mode of protecting trees is a good deal in use both in France and Germany, and has the recommendation of being cheap.

Gardner's Magazine.

Cider.—To Bottle Cider.—To refine and improve the flavour of one hogshead, take a gallon of good French brandy, with half an ounce of cochin eal, one pound of alum, and three pounds of sugar candy; bruise them all well in a mortar, and infuse them in the brandy for a day or two; then mix the whole with your cider, and stop it close for five or six months, after which, if fine, bottle it off. The brandy will prevent the bottles from bursting.

To restore Sour Cider.—If cider gets sour, mix a quart of honey with a quart of brandy or pure spirits, to which add a little salt of tartar, all mixed together, and put into the cask of cider.

To refine and purify Cider.—When the juice of apples has not been well purified, it soon corrupts: the dregs which remain mixed with the liquor, being small pieces of the apples which give the cider an unpleasant rotten taste. In order to purify it, use isinglass filings; and to prevent the cider from growing sour, put a little mustard seed in it.

To cure Cider which is pricked.—To prevent cider from becoming pricked, or to cure it when it is so, put a little pearl-ash or other mild alkali into the cask. A lump of chalk, broken in pieces, and thrown in, is also very good. Salt of tartar, when the cider is about to be used, is also recommended.

To refine Cider and give it a fine Amber colour.—Take the whites of six eggs, with a handful of fine beach sand washed clean; stir them well together, then boil a quart of molasses down to a candy, and cool it by pouring in cider, and put it together with the eggs and sand into a barrel of cider, and mix the whole well together. When thus managed, it will keep for many years. Molasses alone will also refine cider, and give it a higher colour, but to prevent the molasses from causing the cider to prick, let an equal quantity of brandy be put in with it.—Skimmed milk with some lime slaked in it and mixed with it, or with the white of eggs with the shells broken in, is also good for clarifying cider, and all other liquors, when with them; a piece of fresh bloody beef, cut into small pieces, and put into the cask, will also refine the liquor, and serve it for to feed on.

N. E. Farmer.

Flowers.—To obviate the bad effects of decayed flowers, perhaps the best plan of ornamental flower clumps, where expense is not regarded, would be to have them partly planted with evergreens of low growth, or kept low by pruning; and between these to transfer from the pots in which they had been raised, the finest flowers of each season just taken on the point of flowering, in sufficient masses of each colour, and to be removed and replaced with others as soon as they had done flowering, so as always to have a new and brilliant display at all periods of the year, and at the same time a due contrast of a more sober colour from the intermixed evergreens.

Gardner's Magazine.

Extract from a letter to the Editors of the New York Gazette.—Paris, Sept. 8, 1831.—"I have been somewhat interested, within a few days, by seeing a newly invented machine for grinding wheat, &c of so simple a construction, that if the results are such as the inventor assures me they are, and I have no reason to doubt his word, because he has machines already in operation, and misstatements could be easily detected, it must, in a few years do away with the old method of grinding with stones. A machine capable of being worked by one man, grinds forty pounds of French (about forty-four pounds of English) in an hour, capable of making more than a barrel of flour per day, allowing eight hours labour. The flour is bolted at

the same operation, and comes out superfine flour. It is made without beating the flour in the least, which is considered to add to the quality of the flour, and to render it more fit for keeping; and he assures me that it produces more flour from grinding it finer, and that by the result of a trial made by the first baker in Paris, there was a gain of eight per cent in the quality of the bread over flour made in the ordinary way. There appears to be no doubt of its success. The inventor is now constructing a machine of two horse power, which, he says, will be capable of doing as much work as two pair of six feet burr stones, worked by an eight horse power. This will make a revolution among the millers, but revolutions in these times are of every day occurrence.

"I am going to night to see a machine said to be capable of throwing water to the height of 150 feet, by the power of two men. The result of the experiment I will give you in my next.

Yours, &c. E. H."

Stone-Butter.—On the banks of the Kemer de Maslo (Siberia,) there is a fossil or earthy substance of a yellowish cream colour, called by the Russians Kammenoze-maslo, or stone-butter, which is eaten in various ways, and is not disagreeable to the taste. It is, probably, similar to the minerals found in corresponding latitudes on the banks of the Siberia and when exposed to the air hardens; but in wet weather it becomes soft and even liquid. That found on the M'Kenzie resembled a kneaded paste, and was used by the traders, as stated by Captain Franklin, for whitening their apartments.—*Med. Adv.*

Elasticity of Feathers.—The elasticity of feathers was well illustrated by an experiment lately performed in the library of the Royal Institution, London, of immersing feathers, rumpled and bent in almost every direction, in boiling water, and on withdrawing them they were seen to have resumed their regular and natural form. This was accidentally discovered by a specimen of a foreign bird, the plumage of which had been very much rumpled, falling into some hot water, which restored it; and the process appears to be one that may prove of much advantage to the preservers of those beautiful animals.

Advantage of Short Stages in drawing Heavy Loads.—Mr. Stuart Menteath of Closeburn, proprietor of one of the richest coal-fields in the island, both as to quantity and quality, has very successfully employed horse-power to the drawing of heavy loads, by dividing the road into short stages. Before this expedient was resorted to, each horse could travel the distance only 18 miles, and return with a load of 24 cwt. thrice a week; that is to say, the aggregate of the labour of each horse amounted to 3 tons 12 cwt. weekly. But by dividing that distance into four stages of 4½ miles each, four horses can make three trips daily, and draw a load of 33 cwt. each trip, or very nearly 5 tons daily, or 30 tons weekly. Hence, according to this method, the aggregate of the labour of each horse amounts to above 7 tons weekly. Suppose 16 horses are employed, instead of making them travel 18 miles one day, and return with a load the following, the more advantageous plan is to arrange them in four divisions, and make each division travel only 4½ miles in succession. Were this distance divided into six stages, the load might be proportionally increased, with less fatigue to the horses; for it will invariably be found, that the most profitable mode of applying the labour of horses is to vary their muscular action, and revive its tone by short and frequent intervals of repose.—*Quart. Journ. Agric.*

Thinning Trees.—To thin out large trees from among smaller ones, without injuring the latter, adopt the following mode: Fix a rope " at such a height on the top of the tree intended to be cut down, that the weight of the part

below may considerably exceed that of the part where it is made fast. The ends of the rope are then to be tied firmly round the trunk of some one of the neighbouring trees to windward. By this contrivance, the tree which has the rope fixed amongst its branches, will, when cutting through, instead of falling to the ground, remain suspended, and may be easily guided to whatever side may be requisite to keep it from injuring any of its neighbours in coming down. The rope being then untied, the tree will prostrate itself harmlessly on the earth." When thinning has been delayed till the trees have suffered considerably from want of air, the application of it will then be productive of harm rather than good. In the case of pines and firs, it is better to let the stronger trees make room for themselves by destroying the weaker.—*Cruickshank's Practical Planter.*

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Cloth manufactured from the Wool of the Cotton Grasses.—Mr. Helliwell of Greenhurst Hey, near Todmordon, has manufactured a beautiful cotton russet cloth, and also yarn for stockings, from the wool produced by the cotton-grass plants found upon his estate there. This plant grows principally on the highest and most useless land in the kingdom, and consists of two kinds, the common or single-headed cotton-grass, *Eriophorum vaginatum;* and the narrow-leaved cotton-grass, or many-headed cotton-grass, *Eriophorum angustifolium*—both perennial plants, and from the latter of which the cloth and yarn were manufactured. It is supposed, that on many parts of Stansfield Common, neer Todmorden, even in its uncultivated state, there might be from two to three hundred weight produced upon an acre, and that the cost would not exceed 2*d.* to 3*d.* a pound. Specimens of the yarn and cloth have been sent to us, and the cloth is remarkably firm and beautiful.—*Leeds Mercury.*

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Diseases of Poultry.—From a series of observations made on the diseases of domestic poultry, Mr. Flourens makes the following conclusions:—1. in these animals, cold exercises a constant and determinate action on the lungs. 2. The effect of this action is the more rapid and more severe, the younger the animal is. 3. When cold does not cause acute and speedily fatal inflammation of the lungs, it produces a chronic inflammation, which is pulmonary consumption itself. 4. Heat always prevents the attack of pulmonary consumption: when the latter has taken place, heat suspends its progress, and even sometimes arests it entirely, and effects a complete cure. 5. Pulmonary consumption is never, in any stage, contageous: Fowls affected with that disease were not only all day along with the healthy fowls, but at night roosted in the same places, without communicating their disease to them. 6 Lastly, the action of too long confined air exposes these animals to abscesses of the cornea, and inflammation of the ball of the eye. These abscesses and inflammations are also caused in a still more cruel manner, by cold, especially when accompanied with moisture —*Annales des Sciences Naturelles.*

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Prevention of the Mildew on Peach and Nectarine Trees.—the following preventive of the mildew on peach and nectarine trees has simplicity, as well as the experience of many years, to recommend it; Take of sulpher and rain or river water, in proportions of two ounces of sulpher to every four gallons of water. Put the quantity which may be required into a copper or boiler, and let it, (after it commences boiling) boil for half an hour; after which it may be taken out, or suffered to remain until it becomes of a tepid state, when it ought to be applied to the trees by means of the garden engine or syringe, as in a common washing with water. The time for applying it annually, as soon as the fruit is set and considered out of danger.—*Gardner's Magazine.*

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